STANDARD FORM NO. 64

~~SECRET~~

Office Memorandum • UNITED STATES GOVERNMENT

CONFIDENTIAL

TO : Chief, Engineering Division, OC

SPM 7-247

DATE: 25 November 1957

FROM : Chief, Supplemental Programs Division, OC

SUBJECT: Balloon Parabolics

1. Attached are some ideas on the subject. I know that [redacted] is producing large units, and that [redacted] Radio has a 15' dish, although who manufactures it is not known. 25X1

2. The firm requirement is for a high-gain pouchable antenna system. The balloon parabolic seems to offer distinct advantages.

3. It is requested that OC-E explore the field. Items of this type have been budgeted for.

[redacted] 25X1

Attachment:
Ideas on Balloon Parabolic (2 copies)

Distribution:
Original and 1 - Addressee

[redacted] 25X1

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Next 1 Page(s) In Document Denied

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ROUTING AND RECORD SHEET

CONFIDENTIAL

SUBJECT: (Optional)

Balloon Parabolics

FROM:
Chief, Supplemental Programs Division, OC
1613 Alcott Hall
4393

NO. SPM 7-247

DATE 25 November 1957

TO: (Officer designation, room number, and building)	DATE RECEIVED	DATE FORWARDED	OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
1. Chief, Engineering Division, OC 1800 Alcott Hall				
2.				
3.				
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15. CONFIDENTIAL				

ACTION
FCS FCS

FORM 1 DEC 56 610 USE PREVIOUS EDITIONS ☒ ~~SECRET~~ ☐ CONFIDENTIAL ☐ INTERNAL USE ONLY ☐ UNCLASSIFIED

The following constitutes the firm design requirements for these five complete antennas:

A. Breakdown and packaging for transportation in containers not to exceed 20" x 20" x 12" outside dimensions.

B. Receiving only from 10,000 mcs down to 700 or 800 mcs. (The lower limit will be determined as that frequency where the gain of the parabolic equals a conventional array.)

C. Minimum number of feed horns still maintaining a VSWR of better than 3 to 1.

D. Fifty ohms unbalanced feed using high quality coaxial cable for minimum loss.

E. The maximum operating spare to accommodate the reflector, feeds, and blower will be seven feet high, nine feed wide, by nine feet deep.

F. The blower for inflating the antenna must be electrically free of interference and audibly quiet outside the room of operation.

G. Ninety degree manual rotation of the feeds must be provided for polarization changes.

H. Side lobe response should be at least 10 db. below the main lobe.

I. The blower motor should be capable of operating from 110/220 volts 50/60 cycle sources as well as 12 volts d.c. (If a complete motor change for direct current operation is required, we request that we be advised for determining the quantity desired.)

J. A simple and inexpensive azimuth indicator attached to the reflectors. This should be established as a firm requirement.

K. The following table of beam patterns and gain are established as a guide but the maximum gain is requested except at 10,000 mcs where the beam width must not be smaller than two degrees.

FREQ. MCS	GAIN	BEAM WIDTH
800	22 db	13°
1860	28 db	6.5°
4320	34 db	3.1°
10000	36 db	2.5°

L. The main criteria for these antennas is maximum gain, highly flexible for installation, and packagable in 20 x 20 x 12 inch containers.

In establishing a contract, we request that all R+D work required should be priced against the first antenna with four additional units as a basic construction order.